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TITLE: METHODS AND DEVICES FOR PROVIDING
POOLED PERSONAL INTRODUCTION
SERVICES

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METHODS AND DEVICES FOR PROVIDING POOLED PERSONAL INTRODUCTION SERVICES

FIELD OF THE INVENTION

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The present invention relates to personal introduction services, and more particularly to methods and devices for enabling multiple introduction service providers to operate using shared resources.

10 ## BACKGROUND OF THE INVENTION

Over the past several years, computer and telephone based introduction services have become a popular way to meet other people. These services offer users a convenient and time-efficient way to contact, and 15 eventually meet others for romantic or social purposes.

Typically, users of such services can access a main server operated by a service provider, usually through a telephone or a computer terminal. By way of such access, each user can browse a pool of personal greetings and 20 personal information left by others; create his or her own personal greeting and personal information profile; check for messages sent by others; and send personal messages to others.

Often users of a particular introduction service are dissatisfied that not 25 enough others have joined that same service. Consequently, users who have already joined and possibly paid for a particular service may find it difficult to meet other users matching their preferences. Although a user may, of course, join other introduction services, thereby gaining access to additional user pools, this may entail increased financial costs, as well as increased effort and 30 time required to access and to use multiple introduction services. Moreover, with the proliferation of introduction services, many user pools do not have many users, thus exacerbating the problem of meeting other users matching a particular user's preferences. Consequently, the user may be discouraged from using any introduction service.

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The proliferation of, and low barriers to entry for introduction services has also created difficulties for the providers of these services. With different introduction service providers all vying for the same group of potential users, it

5   has become very difficult for introduction service providers to target and attract users. Introduction service providers must therefore invest more effort and money in advertising and distinguishing their services. Disadvantageously, the high cost of advertising and marketing makes it impractical to advertise in every media outlet, thereby making it impractical to

10   reach all potential users. Additionally, introduction services must continually offer more and more incentives, such as promotional free usage, in order to attract new users.

Regardless of the number of users they actually serve, introduction
15   service providers must typically still undertake a substantial investment to set up the infrastructure to support such a service. Hardware needed to implement an automated introduction service must be acquired; premises to house the system must be purchased or rented; and the personnel needed to manage and maintain the system has to be hired.

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As a consequence, those who offer introduction services have begun to pool their resources, with a single infrastructure host providing services for multiple introduction services, typically using common hardware. So for example, a single introduction service host may provide computer or

25   telephone introduction services under several brands. Each brand, in turn, may identify a particular introduction service provider. A service provider may be a local newspaper, a club or the like. In this way the multiple service providers can each appear to provide a distinct introduction service. Users of one introduction service may, for example, contact the service provider by

30   way of a particular computer network address. Additionally, users of one introduction service benefit from an increased pool of users. That is, users associated with one service provider may share access to many users associated with other service providers.

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Unfortunately, not all service providers appeal to the same group of users. Thus pooling of resources often has the unforeseen drawback that some users may be exposed to users with dissimilar and perhaps incompatible interests. For example, one introduction service may serve to provide casual introductions, while another may serve to provide discreet encounters. Users of the two services may not wish access to each other. In such circumstances pooling may be inappropriate.

Accordingly, it would be desirable to allow introduction service providers to reduce their infrastructure and overhead costs, while offering users of different introduction service providers access to a large pool of other users, without alienating the users.

SUMMARY OF THE INVENTION:

It is therefore an object of the present invention to allow different introduction service providers to pool users, so that users of associated with a first service provider have access to greetings of users associated with other service providers. Conveniently, access to greetings of various service providers and various users may be filtered, so that users of the first service provider only have access to users of selected other service providers, and to users having sanctioned interests.

In accordance with an aspect of the present invention, there is provided a method of facilitating exchange of messages at a computerized message exchange system. The method includes storing a first plurality of greetings at the system. Each of these first plurality of greetings is associated with users of a first introduction service provider. The method further includes storing a second plurality of greetings at the server. Each of the second plurality of greetings associated with a user of an introduction service provider, different from said first introduction service provider. The method allows users associated with the first introduction service provider, access to selected ones of the second plurality of greetings, based on criteria associated with an

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originator of each of said selected ones of said second greetings, and criteria set by the first introduction service provider.

Conveniently, the method may be performed by software stored on a computer readable medium.

Other aspects and features of the present invention will become apparent to those of ordinary skill in the art, upon review of the following description of specific embodiments of the invention in conjunction with the accompanying figures.

BRIEF DESCRIPTION OF THE FIGURES

In figures which illustrate, by way of example, embodiments of the present invention,

FIG. 1 is a simplified block diagram of computer workstations and telephone sets in communication with an introduction service messaging system, exemplary of an embodiment of the present invention;

FIG. 2 illustrates an interactive voice response (IVR) unit forming part of the system of **FIG. 1**;

FIG. 3A illustrates the interrelationship of various databases stored at the system of **FIG. 1**;

FIG. 3B illustrates an example user personal information record forming part of a greeting database hosted by the system of **FIG. 1**;

FIG. 3C illustrates an example message record forming part of a voice message database hosted by the system of **FIG. 1**;

FIG. 3D illustrates an example administrative record forming part of a user accounts database hosted by the system of **FIG. 1**;

FIG. 3E illustrates an example service provider record forming part of a service provider database hosted by the system of **FIG. 1**; and

FIG. 3F illustrates an HTML record forming part of an HTML database hosted by the system of **FIG. 1**

FIGS. 4-5 are a flow charts illustrating exemplary steps performed by the system of **FIG. 1** to allow users access to the system of **FIG. 1**;

DETAILED DESCRIPTION:

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FIG.1 illustrates a messaging system **10** that acts as host for multiple introduction service providers, to provide introduction services to end users. System **10** is exemplary of an embodiment of the present invention. End users associated with the service providers may access system **10** by way of

10   a data network **12**, and also by way of telephone network **14**. End-users may use system **10** to meet each other and exchange messages. As will readily be apparent, system **10** could easily provide introduction services solely by way of telephone network **14**, or by way of data network **12**. End users are encouraged to use system **10**, by service providers that promote introduction

15   services. Multiple service providers may contract with the operator of system **10**, to host services at system **10**. In this way, the multiple service providers may share physical resources, and may even provide introduction services without ownership or administration of hardware and software.

20   In the illustrated embodiment, system **10** includes an interactive voice response ("IVR") server **16**, in communication with a database server **18**, and a voice message database server **22**. Further, a web server **20** is interconnected with database server **18**. IVR server **16**, database server **18**, voice messaging database server **22**, and web server **20** are preferably

25   interconnected to each other by of a computer network such as a local area network ("LAN").

IVR server **16** is in communication with telephone network **14**. Telephone network **14** is preferably the public switched telephone network ("PSTN"). IVR server **16** allows users to access system **10** by way of

30   telephone network **14**. IVR server **16** is connected to telephone network **14** through communication links **48**, **50**, and **52**.

Each of the illustrated communication links **48**, **50** and **52** is preferably a conventional telephone line associated with a unique dial number, which may in turn be associated with an introduction service provider using system **10**. For example, link **48** may be associated with telephone access number

5   555-0001. This phone number may be dialled by end users subscribing to one of the introductions services in order to access system **10**. Similarly, links **50** and **52** may be associated with other phone access numbers, such as the numbers 555-0002 and 555-0003, respectively. Each of these phone numbers may be used by end users associated with two additional introduction service

10   providers to access system **10**. Additional communication links may connect IVR server **16** to telephone network **14**. Each additional communication link is preferably associated with a different telephone access number. Those versed in the art will realize, of course, that only a single physical communication link may be used connect IVR server **16** to telephone network

15   **14**, and that this single communication link may correspond to a plurality of phone access numbers that can be used to access system **10**.

Example user telephones **54**, **56**, and **58** interconnected with telephone network **14** are further illustrated. End users of system **10** can communicate

20   instructions and enter information by pressing keys on a dual tone, multi-frequency ("DTMF") touchpad on telephone **54**, **56** or **58**. For clarity, only three telephones are illustrated. Of course, system **10** could be accessed by any other telephone in communication with telephone network **14**. End-users using telephones **54**, **56**, or **58** may access system **10** by dialling one of the

25   various access numbers associated with links **48**, **50**, or **52**.

FIG. 2 schematically illustrates an exemplary embodiment of IVR server **16**. IVR server **16** is preferably a conventional computing device that stores and executes suitable software to act as an interactive voice response

30   processor. As such, IVR server **16** includes processor **70** such as an INTEL PENTIUM™ class CPU, and memory **72** including random access memory (RAM) and persistent storage memory for storing and executing computer programs. Suitable data and computer programs may be loaded into IVR server **16** from computer readable medium **36** (also illustrated in **FIG. 1**), by

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way of a suitable I/O device **78** and interface **76** forming part of IVR server **16**. A network interface **82** connects IVR server **16** to voice message database server **22**, (FIG. **2**) and database server **18**, by way of a local area network (not shown). Optionally, IVR server **16** includes a video I/F **74** and monitor

5 **84**. Keyboard **90** may further optionally be interconnected with interface **76**.

IVR server **16** preferably also includes a voice response unit (VRU) **80** in communication with processor **70**. VRU **80** may be a Dialogic PathFinder IVR, to provide the physical connection between IVR server **16** and telephone

10 network **14**. VRU **80** may signal to processor **70** that a user's call is waiting to be serviced when an incoming call arrives. In addition, VRU **80** synthesizes voice or speech data received from either memory **72**, or from interconnected server **22**, as detailed below, for transmission to a recipient in communication with telephone network **14**. VRU **80** may further include storage medium in

15 the form of read-only-memory, or some other suitable medium, to hold a repository of common voice sequences in a suitable computer readable sound data format that can readily be converted into speech signals.

VRU **80** is preferably also capable of decoding DTMF tones

20 corresponding to number keys on a telephone touchpad. VRU **80** receives signals corresponding to a user's instructions and information, as input over telephone network **14**. VRU **80** converts these signals into computer readable format, and preferably provides these to processor **70** for further processing. VRU **80** preferably also includes an analog to digital converter (A/D), to

25 convert speech segments articulated by a user, like a personal greeting, or a voice message, into a digital speech signal that can thereafter be converted into a computer readable sound format using a suitable coder/decoder. Converted speech segments can then be stored within memory **72** or on database server **18**.

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Memory **72** of IVR server **16** stores software including voice prompt sequences that prompt users for requisite information, and software for storing user voice response segments in a computer readable sound format formed by a suitable CODEC. These voice response segments are used to

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provide voice prompts and information to users accessing system **10** through
a telephone. Voice response sequences transmitted to users are preferably
segments that are unique to the particular service provider the user is
subscribing to. As such, the voice response segments may greet the user,

5   announce the name of the service and the name of the service provider, and
instruct the user to enter information and make selections particular to that
service provider, as detailed below. The type of information requested by IVR
server **16** and the prompted selections will depend on the particular service
provider.

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Web server **20**, illustrated in **FIG. 1** connects system **10** with computer
data network **12**. Data network **12** is preferably a packet switched data
network, such as the public Internet. Web server **20** may be connected to data
network **12** by way of a T1, DSL or other suitable interface (not illustrated) in a

15   conventional manner.

Web server **20** has a hardware architecture similar to that of IVR server
16, and includes a processor and memory including random access memory
(RAM) and persistent storage memory for storing and executing computer

20   programs. Suitable data and computer programs may be loaded into web
server **20** from a computer readable medium, such as computer readable
medium **36** (illustrated in **FIG. 1**), by way of a suitable I/O device and interface
forming part of web server **20**. A network interface connects web server **20** to
data network **12**. A further network interface may interconnect web server **20**

25   to database server **18**, by way of a local area network (not shown).

Persistent memory at web server **20** may store suitable Apache^{TM},
Netscape^{TM} or similar server software, for execution, adapting web server **20**
to act as a conventional hyper text transfer protocol (HTTP) server, and thus

30   provide a plurality of home pages for access by network interconnected
computing devices. Each home page may correspond to a different service
provider that allows the end users subscribing to its service to access system
10 through data network **12**. In order to accomplish this, each home page
hosted by web server **20** is preferably associated with a different uniform

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resource locator (URL) that corresponds to web server **20**. Domain names associated with URL addresses may be registered by the various service providers, and stored at network domain name servers (not illustrated). Thus, network queries over data network **12** to the various URL addresses are

5   directed to web server **20**. Web pages that make up these home pages may be implemented using one of the conventional web page languages such as hypertext mark-up language ("HTML"), Java, javascript or the like. These web pages may also be stored at web server **20**, within a database **32**, as detailed below, and can be provided to computing devices in communication with web

10   server **20**, in response to receiving a network request directed to an associated URL.

        Web pages provided to computing devices in communication with system **10** typically provide users with information about a service provider's

15   offerings, and allow end users to make selections and provide information by clicking on icons and hyperlinks, and by entering data into information fields. As such, service provider web pages are typically designed and programmed by the service providers, and hosted by system **10**. This data allows the home pages of different service providers to have completely different

20   appearances and offer users different options and features. For example, some service providers may allow users using their services to enter only text-based data. Other service providers may allow users to enter both text and sound data. As will become apparent, once users respond to presented home pages, data is sent back to web server **20** where it can be processed.

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        Database server **18** illustrated in **FIG. 1** is preferably also a conventional network aware computing device, including a processor, computer readable memory, and a network interface. As such, database server **18** stores and executes a conventional network aware operating

30   system such as Microsoft Windows NT operating system, a Unix operating system, or the like. As well, database server **18** includes a conventional filesystem, preferably controlled and administered by the operating system governing overall operation of database server **18**. This filesystem preferably hosts a user database **24**, a message database **26**, a user accounts database

28, and a service provider database **30**, detailed below. Database server **18**
provides information contained in these databases to requesting computing
devices. If needed, database server **18** may of course host other databases.
Software programs to process requests made by interconnected computing
5   devices may be stored in persistent storage memory for execution by
database server **18**. Similarly, software adapting database server **18** to
perform in manners exemplary of the present invention, including the
operating system, is preferably also stored within persistent storage memory
at database server **18**. These and other software applications may be loaded
10   into persistent storage memory of database server **18** from computer readable
medium **36**.

Exemplary workstations **38**, **40**, and **42** interconnected with data
network **12** are also illustrated in **FIG. 1**. Workstations **38**, **40**, and **42** may
15   also be connected to data network **12** by way of a modem or other suitable
network interfaces. Workstations **38**, **40**, and **42** are preferably conventional
network aware computing devices. By way of example, workstations **40** and
42 each includes a microphone **44** and **46** and related interfaces, whereas
workstation **38** does not include a microphone.
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Workstations **38**, **40**, and **42** may access system **10** by way of data
network **12** and web server **20**. As such, workstations **38**, **40**, and **42** typically
store and execute network aware operating systems including protocol stacks,
such as TCP/IP stack, and internet web browsers such as Microsoft Internet
25   Explorer™, Netscape™, or Opera™ browsers. Software may be loaded into
memory of workstations **38**, **40**, and **42** by way of computer readable media
(not illustrated).

Again, for clarity of explanation only three workstation **38**, **40**, and **42**,
30   in communication with system **10** are illustrated. As will be appreciated,
system **10** could be accessed by any computing device in communication with
data network 12.

Example records of databases **24**, **26**, **28**, **30** and **32** are more particularly illustrated in **FIGS. 3B**, **3C**, **3D**, **3E** and **3F**. **FIG. 3B** illustrates an example end-user personal information record **100** forming part of the user database **24** hosted by the server of **FIG. 1**. **FIG 3C** illustrates an example

5   message record forming part of the message database **26** hosted by system **10**. **FIG. 3D** illustrates an example administrative record forming part of the accounts database **28** hosted by the server of **FIG. 1**. **FIG. 3E** illustrates an example service provider record forming part of the service provider database **30** hosted by database server **18**. **FIG. 3F** illustrates an example HTML record

10 forming part of HTML database **32** hosted by server **20**.

FIG. 3A illustrates the interrelationship of records within databases **24**, **26**, **28**, **30**, **32** and **34**. As illustrated in **FIG. 3A**, each service provider record **160** is associated with multiple users, and therefore multiple personal

15 information records **100** within user database **24**. Moreover, each service provider record **160** is associated with an HTML data record **200** stored within HTML database **32**. Each personal information record **100**, in turn may be associated with a single record **180** within voice message database **34**, one or more message records **190** within database **26**, and a single administrative

20 record **140** within database **28**.

User database **24** preferably includes a plurality of personal information records **100** each corresponding to a known user of system **10**. Personal information records **100** store information about each user associated with

25 system **10**. An example personal information record **100** is illustrated in **FIG. 3B**. Specifically, personal information record **100** preferably includes a user ID field **102** that contains a unique identification number that allows database server **18** to easily index and access record **100**. Record **100** preferably also includes a service provider ID field **104** that identifies the particular service

30 provider with which a particular user is associated. Service provider ID field **104** preferably contains a unique numerical identifier of a service provider hosted by system **10**.

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Software adapts database server **18** to use the contents of field **104** to determine the nature of service to be provided to the particular user associated with record **100** and to limit the ability of other users of system **10** wishing to browse the contents of record **100**. User information record **100**

5   preferably also contains password field **106** containing a password that is preferably known only to the user associated with record **100**. Name field **108** contains a name or nickname of the user. Additionally, record **100** includes several fields containing personal attributes of an associated user including gender field **110**, detailing the user's gender; age field **112** detailing the user's

10   age; height field **114**, and weight field **116**, detailing the user's height and weight, respectively; education field **118** providing information about the user's educational background; ambition field **120** listing the user's ambitions; job field **122** describing the user's occupation; and preferences field **124** containing information about the characteristics of others that the particular

15   user is seeking to meet. Record **100** further includes personal greeting field **126** which may store a personal greeting stored in a computer readable format, or a pointer to such a greeting record **180** within database **34** (**FIG. 3A**). The format of greeting **180** and database **34** are not explicitly detailed. The greeting is provided by the user associated with record **100**. The greeting

20   may be stored as either a pre-recorded greeting in a suitable sound data format such as G.711, G.726 or the like, or a text-based greeting, or a combined text and sound greeting. Record **100** may further optionally include a photo field **128** that may contain image data in one of several computer readable formats. Field **128** may for example store a JPEG, or GIF of a photo

25   of an associated user.

Preference field **124**, when populated reflects the nature of a user's interest in use of the service. Preferably, a single bit is used for each of a pre-defined number of preferences. For example, field **124** may reflect if a user is

30   looking for friendship, a long lasting relationship, a casual encounter, a same-sex relationship, or the like. Each of these interests is signified by a single bit within field **124**. At a later point, this field **124** may be used to screen other users' access to a particular user.

Message database **26**, stores a plurality of message records **190**. Each message record **190** represents a message originated by one user of system **10**, for receipt by another user of system **10**. An example message record is illustrated in **FIG. 3C**. As illustrated, each record **190** includes an

5　identifier of an intended message recipient in field **192**, and an identifier of a message originator in field **194**. Identifiers stored in fields **192** and **194** correspond to user identifiers stored in field **102** of a corresponding user identifier record **100** in user database **24**. Thus, these fields **192** and **194** in combination with field **102** of a record **100** may unequivocally identify

10　message originators and recipients. Each record **190** further includes a field **196** containing data representing a message to be received by the intended recipient. The data may be text, voice or other data. Optionally each record **190** may contain additional fields containing such additional information as the date and time of a message, its urgency, whether the message has been

15　received, and the like.

Accounts database **28** preferably stores administrative data for end-users of database server **18**. Accounts database **28** preferably contains a plurality of account records **140** each also associated with a known user of

20　system **10** as illustrated in **FIG. 3A**. An example account record **140** is illustrated in **FIG. 3D**. As illustrated, each account record **140** includes several fields that contain administrative information about a particular user. Specifically, account record **140** preferably includes a UserID field **142** and service provider ID field **144** containing the same unique identifiers stored in

25　fields **102** and **104**, respectively, of record **100** (**FIG. 3B**). Field **144** again identifies the service provider with which a user is associated.

As will become apparent, database server **18** may calculate user access charges based on rates established by each service provider.

30　Charges may be stored in a service provider record, as detailed below. Calculation of charges is also described below. Record **140** preferably further includes name field **146** containing the true name of an associated user, and address field **148** storing a contact address of that user. Credit field **150** includes a total credit amount paid by the user to his or her service provider.

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Field **150** may be populated upon creation of a user account, and replenished from time to time.

Service provider database **30** (**FIG. 1, 3A**) preferably contains a plurality of records **160** each containing information associated with a service provider using system **10**. Service provider database **30** preferably stores data pertaining to the individual introduction service providers using database server **18**, and in particular data identifying the total charges attributable to all users associated with a service provider using the provider's services. Data stored in database **30** controls the overall operation of system **10**, for users associated with a particular provider. Moreover, database **30** may be used by an operator of system **10** to asses earnings that individual service providers have earned from their users.

An example service provider record **160** is illustrated in **FIG. 3E**. As illustrated, each example record **160** includes a service provider ID field **162** containing the same unique identifier stored in fields **104**, and **144** of records **100** and **140** (**FIGS. 3B, FIG. 3D**), respectively. Record **160** preferably also includes service provider name field **164** containing the business name of the service provider associated with record **160**, as well as address field **166** storing the business address of that service provider to where the detailed earnings and amounts-owing statements are to be sent. Total earned charges field **168** contains the total charges that the service provider associated with record **160** billed its users. Record **160** further contains field **176** containing additional service provider data, including for example, a rate structure for users, and a pointer to a an associated service provider HTML page, stored as a record **200** (**FIG. 3A**) within database **32**.

Record **160** further includes two data structures, exemplified by field **172**, storing example user access bit masks, that identify service providers that allow pooling of messages to the benefit of their respective users. Specifically, example field **172** stores a bitmask including a plurality of bits. One bit is associated with each service provider that uses system **10**. As such, in the example embodiment, the mask in field **172** has length equal to at

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least the number of providers supported by system **10**. As will become apparent, masks in fields **172** associated with each service provider are used by server **18** to allow or deny users' access to greetings of other service providers. A bit in a mask in field **172** having a value of one ("1") signifies that

5 users associated with the service provider identified by the users' personal information record **100** have access to users of the service provider identified by the bit. As will become apparent, the bit mask in fields **172** may be used to limit user access across service providers hosted by server **18**.

10 Further, an additional field **174** stores a further service provider interest bit mask within each service provider record **160**. Each bit represents a user interest type, to which a user of the service provider associated with record **160** should not have access. As noted, user interests of individual users are identified by field **124** of a user record **100** (**FIG. 3B**). As will become

15 apparent, service provider interest bit mask in field **174** may allow a service provider to prevent its users from having access to other users whose interests are not endorsed by the service provider. The bit mask in field **174** identifies prohibited interests of other users. For ease of comparison mask **124** and mask **174** include a like a number of bits.

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An example service provider record within HTML database **32** is illustrated in **FIG. 3F**. As illustrated, each record **200**, includes a field **202** containing an identifier of an associated service provider, and a field **204** containing HTML data used by server **20**, in the provision of data and voice

25 prompts to users associated with the associated service provider.

Those skilled in the art will appreciate that many other possible fields may be included in records **100, 140, 160, 180, 190,** and **200**. Further, it will be appreciated that the fields included in records **100, 140, 160, 180** and **190**

30 may be structured in many ways, and that the records in databases **24, 26, 28, 30,** and **32** can be organized in many different ways.

Databases **24, 26, 28,** and **30** are preferably stored on an alterable storage medium, such as a hard disk drive, which may form part of server **18**.

Databases **24**, **26**, **28**, and **30** are managed and maintained by server **18** which may further store and execute a database engine such as an SQL server, Dbase, or other suitable software designed to manage and maintain the information stored within databases **24, 26, 28**, and **30**.

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As will be appreciated, although illustrated as separate databases, each of databases **24, 26, 28** or **30** could be stored within a separate database table within a single database stored at server **18**.

10   So, IVR server **16** may be programmed to play a series of voice prompts to a user, and collect responses from the user in the form of DTMF tones, in a conventional manner. The flow and sequence of prompts, as well as permissible responses are controlled by software provided by individual service providers. This software may be stored at IVR server **16** and within a
15   record **200** of HTML database **32** associated with a service provider.

In practice, different service providers using system **10** preferably advertise their services as provided by system **10** in several media, such as newspapers, television, radio, Internet, and other possible media outlets.
20   Advantageously, individual service providers could co-ordinate their advertising campaigns by deciding in advance which media outlets each service provider should advertise in, thereby reducing the overall advertising cost borne by individual service providers. Preferably, the featured ads can include information about a service provider's service, and either a phone
25   number or a URL that new and registered users may use to access the service. In order to entice new users to register, a service provider's advertisements may include samples of greetings composed by its users on system **10**. A service provider's advertisements need not inform potential users that the service provider is only one of several service providers offering
30   their services through system **10**. Users are simply not typically informed of the hardware or methods used by each provider, as these are typically sufficiently transparent.

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A new user seeing an ad promoting the introduction service of one of the service providers using system **10** may access system **10** by following the access instructions listed in the ad. If a service provider has promoted a telephone-based introduction service, the service provider would provide a telephone access number in its ad. For example, the service provider may provide phone number 555-0001 which would become the number used by users subscribing to that service provider. Subsequently, prospective users, using, for example, telephone **54**, **56**, or **58**, dial the telephone number provided by the service provider of choice.

Alternatively, each service provider may also allow users to access system **10** through data network **12**. If a service provider facilitates this form of access, the service provider may provide a unique URL address in its advertisements that allows the service provider's users to access system **10**. A user subscribing to the service provider's introduction service using one of workstations **38**, **40**, or **42** may enter the URL at the appropriate field on the web browser installed on the workstation, whereupon a link between the workstation and server **18** or server **20** may be established.

Steps performed at system **10** to allow a user accessing system **10** through an access link associated with one of the service providers of system **10** to register and use system **10**, exemplary of an embodiment of the present invention are more particularly illustrated in **FIGS. 4** and **5**. For simplicity, steps illustrated in **FIG. 4** and **5** may be equally applicable to access by way of data network **12**, as well as by way of telephone network **14**.

So, a link between system **10** and the example user, using either workstations **38**, **40**, or **42**, or telephone **54**, **56**, or **58**, is established in step **S402**. Next, system **10**, under software control prompts a user to enter an identifier or request new registration in step **S404**. Server **18**, in effect assesses if a user is a new user, or a repeat user in step **S404**.

In the event the user is a repeat user, the user is prompted for his or her personal identifier for authentication, in step **S406**. If the user is properly

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authenticated, as determined in step **S408**, steps **S504** and onward are then performed. If on the other hand, a user is a first time user, user registration is effected in steps **S410**.

5   If the example user accesses system **10** through a workstation (e.g. workstation **38**, **40**, or **42**), server **18**, acting as a conventional HTML web server, provides workstation **38** a registration form web page stored at server **20**, preferably in HTML or Java script, soliciting required information in step **S410**. The web page provides workstation **38** a unique HTML page

10   corresponding to the service provider that the user wishes to subscribe to, as stored within a record of database **32** associated with the contacted service provider. As will be appreciated, if other users register by accessing server **18** through URLs corresponding to different service providers, server **18** would transmit corresponding HTML pages corresponding to the different

15   service providers. A user may then complete relevant fields on the HTML page, including such information as name, home address, age, credit card number, and the like. The completed page may be submitted and provided to server **18**. The contents of the page may then be used by server **18** to populate fields of record **100**. Optionally, the user may provide a pre-

20   recorded, greeting using an associated microphone and suitable software. This greeting may be used to populate field **126** of record **100**, or a record **190** of database **26**.

        Similarly, if an example user accesses system **10** using telephone **54**,

25   **56**, or **58** by establishing a communications link with IVR server **16** by way of telephone network **14**, IVR server **16** may initiate a registration sequence in step **S410** by transferring the call to a telephone call center (not shown). The call center may prompt the user for his/her name, address, age, credit card number, and the like. This information may be used by a call center agent

30   using a remote terminal in communication with system **10** to create a user record **100** and populate of appropriate fields. Next, upon first contact with server **16**, the user may be prompted by VRU **80** to provide a voice greeting used to populate fields **126** (not specifically illustrated).

In response to receiving the user information, either from the user or from a call center operator, in step **S412** server **18** uses the received information to create a suitable User ID and create associated records **100** and **140** in databases **24** and **28** respectively, thereby effectively creating an

5   account for that user. Server **18** may also assign or prompt a password or personal identification number that the user may enter in order to later access the created account. User ID and password may be stored in fields **102** and **106**, respectively, of an associated user record **100**. Server **18** preferably also populates fields **104** and **144** of record **100** and record **140** with an

10   identification number of the service provider the user has registered with in accordance with the URL or telephone access number that was used by the user to access system **10**. Similarly, server **18** populates field **124**, to reflect pre-determined preferences of the user.

15   Field **150** of record **140** may be populated with an amount representing a pre-payment by the user. Pre-payment may be effected by credit card, cheque or otherwise. Once any pre-payment is exhausted, server **18** may prompt for additional payment. Steps performed to request additional payment are not illustrated, but will be understood by those of ordinary skill.

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Once registered, the example user may use and access system **10** in order to browse greetings of others, and potentially leave messages for those others. After being authenticated in steps **S406** and **S408**, example steps **S500** exemplary of an embodiment of the present invention, illustrated in **FIG.**

25   **5**, are performed. For the purposes of the example, the example user will be referred to as the querying user, and will be identified by UserID=querying_user.

So in step **S504** system **10** provides the example querying user

30   information about the features and options available to users using the service provider's services. The particular features and options that may be available will of course vary from one service provider to another. Thus, a querying user subscribing to the services of a particular service provider may be limited in how that user may interact with system **10** by those features and options

that are offered by that service provider. As noted, control of presented features and options may be governed by the contents of field **176** and an associated HTML record **200** within HTML database **32**, particular to each service provider.

If the querying user accesses system **10** through workstation **38, 40,** or **42**, the available features and options will be provided to the user by way of an HTML page associated with the particular service provider.

If the querying user accesses system **10** through telephone **54, 56,** or **58**, available features and options will be spoken by VRU **80**. The querying user may then make his/her selections and enter information by pressing the appropriate keys on telephones **54, 56** or **58** causing selections to be sent as DTMF signals. Example options could allow the querying user to update his or her personal greeting, retrieve messages left for the user, obtain account information, or exit. For clarity these options are not detailed in **FIGS. 4** and **5**.

Typically, a querying user will also be able to browse the greetings of other users identified by database **24**. As system **10** provides introduction services for multiple service providers, the querying user need not be limited to browsing greetings that originate with users of the same service provider. Instead, as will become apparent, a querying user may browse greetings of many or all users hosted by system **10**. So greetings stored at system **10** may be classified as either originating with users of the same service as the querying user or with users of other service providers. System **10** stores a first plurality of greetings associated with the introduction service provider of the user and a second plurality of greetings associated with users associated with other service providers.

As should be apparent, each service provider may allow greetings to be browsed by user preferences. Preferences may be input by way of DTMF tones, in response to voice prompts, recognized by VRU **80 (FIG. 1)**. For example, a user may input an age or gender preference. Based on the

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prompts and user responses, query criteria may be generated at system **10**. In the event the querying user accesses system **10** by way of data network **12**, the user preferences may be input by way of completed HTML form.

5   Thus, in steps **S504** and **S506**, system **10** prompts the querying user for input and receives the user's browsing selections. User selections received at IVR server **16** in the form of DTMF signals are converted by VRU **80** into computer data compatible with server **18**, and then forwarded to server **18**. In the event a user is accessing system **10** by way of data network

10   **12**, user browsing selections are sent from one of workstations **38**, **40** or **42**, to system **10**, as a result of completing a HTML form.

Optionally, user browsing selections may be prompted each time a user contacts system **10**, or prompted at initial user registration and stored

15   within a record **100** of user database **24**.

Once user preferences are obtained, queries of databases **24** and **30** are processed by server **18** in step **S508-S522**.

20   Specifically, in steps **S508-S514**, server **18** forms a suitable query to extract records from database **24**. In step **S508**, server **18** forms an initial query parameter to more particularly identify the querying user. That is, the following SQL query may be initiated in steps **S508**

25   SELECT * FROM database **24**, WHERE UserID=querying_user.

From the resulting record associated with the querying user, server **18** may determine the service provider ID of the querying user, and obtain the corresponding service provider record from database **30**.

30
That is, server **18** may obtain the service provider record **160**, by executing the SQL query in step **S510**,

SELECT * FROM database **30**, WHERE serviceprovider_ID=serviceprovider_ID of querying user

Now, using this information and specifically fields **172** and **174** of the retrieved record **160**, a user query may be generated.

Specifically, all records within database **24** of users with sharing service providers, and sanctioned preferences are retrieved.

Suitable service providers may be identified in step **S512** by decoding user bit mask in field **172** of the querying user's service provider to identify the service providers with which the querying user's service provider permits sharing.

That is,

shared_providers = [ValueBit0 (Mask **172**) AND service_provider_ID0] OR [ValueBit1 (Mask **172**) AND service_provider_ID1] .. OR [ValueBit$n$-1 (Mask **172**) AND service_provider_IDn-1]

Next, the query is further narrowed to users with interests corresponding to the querying user, and further sanctioned by the querying user's service provider.

That is,

interests=user_interests NOT prohibited_interests

So, the users of system **10** matching the user's query, and sanctioned by the user's service provider may be found by initiating a single database query of database **24** and corresponding greetings in database **34** in step **S514** with

SELECT * FROM database **24** where (Service_ProviderID =shared_provider [field **204**] AND preferences [field **224**]=interests

Put another way, the comparison of the contents of field **172** of the service provider of the querying user allows server **18** to limit user access across service providers co-hosted by server **18**. All this is, of course,

5 transparent to end-users who need not realize that they have or do not have access to users of other service providers.

Field **174** associated with the querying user's service provider stores user interests that identify users that are incompatible with the interests of the

10 querying user's service provider. In this way, the querying user's service provider can filter messages of other users whose interests are incompatible with those of the service of the service provider, based on the users' profiles. An introduction service could thus limit access to users whose interests are contrary to the interests of the majority its users. This comparison is effected

15 by logically ANDing the value of field **174** of the user's service provider with field **124** of record **100** of other users. If the result is non-zero, the other user is excluded from the query.

Use of a mask within field **174** allows service providers to further

20 control user access to greetings of users of other providers. So, for example, users of one service provider may only be allowed access to users who have interests deemed acceptable. So, a user of an introduction service that promotes long-term relationships may also have access to greetings of suitable users of another service provider that also has users interested in

25 more casual or risque encounters. However, users of that other service provider seeking casual relationships will be excluded.

In any event, once a query identifying potential recipient users has been formulated, suitable records of database **24** and database **34**

30 corresponding to the query may be retrieved in step **S514**. One or more of the located greetings is presented to the querying user in step **S518**. In the event system **10** has been accessed by way of telephone network **14**, the greetings may be re-played sequentially using VRU **80**. In the event the user

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has accessed system **10** by way of data network **12**, system **10** may present links to all located greeting by way of an HTML index page.

After being presented a greeting, the user is given the option to respond to a presented greeting to initiate communications with the originator of the greeting in step **S520**. If the user chooses to respond, as assessed in step **S520**, the user may leave a message for the recipient user in step **S524**, that is stored in the database **26**. As well, in step **S528** a charge is levied to the user's account. Specifically, field **150** of the user's record **140** (**FIG. 3D**) may be decremented a set amount. Field **150** may be decremented a fixed amount, or a variable amount, based for example on, the service provider, on the length of time of the response, or the like. At the same time, the user's service provider's net collected charges as tallied in field **168** of record **160** (**FIG. 3E**) for the service provider associated with the user is incremented in step **S530**, to reflect the charges accrued by the user. In the event a user runs out of credit, he or she may be requested to provide additional funds. Specific steps to request additional funds are not illustrated.

After the user has responded to any particular greeting, the user is given the option in step **S532** to exit or to view or listen to additional greetings. If the user chooses to view of listen to additional greetings, step **S518** and onward are repeated.

At a later time, the contents of field **168** may be used by an operator of system **10** to tally the value of services provided by the operator of system **10** to service providers hosted at system **10**. Charges to the various service providers sharing system **10** could be levied accordingly.

As will be appreciated, while the organization of hardware and software components, databases and directory structure have been illustrated as clearly delineated, a person skilled in the art will appreciate that this delineation and organization is somewhat arbitrary. Numerous other arrangements of hardware, software and data are possible. For example, database server **18** and IVR server **16** could be combined into a single unit

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whereby that unit would have similar components as those described in relation to server **18** and IVR server **16**. Similarly, databases **24, 26, 28,** and **30** could be organized in numerous ways, using relational or object oriented structures. Similarly, data stored in such databases could be stored in

5 numerous equivalent ways. Masks stored in fields **172, 174,** and **124** could be replaced with alternate structures, allowing storage of similar or identical information, such as for example arrays, short integers, or the like.

Those of ordinary skill will appreciate that many components of system

10 **10** could easily be integrated. Servers **16, 18, 20** and **22** could, for example, be combined into a single unit having necessary components.

Further, it will also be appreciated by those skilled in the art that any one of workstations **38, 40,** or **42,** as well as any one of telephones **54, 56,** or

15 **58,** need not be interconnected to system **10.** Rather, any of the workstations or telephones may be interconnected to an intermediate server associated with one or more of the service providers, which may in turn be interconnected to server **20** via data network **12** or telephone network **14.**

20 It will be further understood that the invention is not limited to the embodiments described herein which are merely illustrative of a preferred embodiment of carrying out the invention, and which are susceptible to modification of form, arrangement of parts, steps, details and order of operation. The invention, rather, is intended to encompass all such

25 modification within its scope, as defined by the claims.